

Species Listing PROPOSAL Form:

Listing Endangered, Threatened, and Special Concern Species in Massachusetts

Scientific name: *Liparis loeselii*Current Listed Status (if any): Watch ListCommon name: Loesel's TwaybladeProposed Action: Add the species, with the status of:Threatened Remove the species Change the species' status to: _____

Change the scientific name to: _____

Change the common name to: _____

(Please justify proposed name change.)

Proponent's Name and Address:

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Association, Institution or Business represented by proponent:

Natural Heritage and Endangered Species Program

Proponent's Signature:



Date Submitted:

3/3/2023

Please submit to: Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries & Wildlife, 1 Rabbit Hill Road, Westborough, MA 01581

Justification

Justify the proposed change in legal status of the species by addressing each of the criteria below, as listed in the Massachusetts Endangered Species Act (MGL c. 131A) and its implementing regulations (321 CMR 10.00), and provide literature citations or other documentation wherever possible. Expand onto additional pages as needed but make sure you address all of the questions below. The burden of proof is on the proponent for a listing, delisting, or status change.

(1) **Taxonomic status.** Is the species a valid taxonomic entity? Please cite scientific literature.

This is the current accepted name for this species. This name was originally published in De Orchid. Eur.: 38 (1817).

(2) **Recentness of records.** How recently has the species been conclusively documented within Massachusetts? **The most recent observation submitted to and accepted in NHESP Heritage Hub was in 2021, though there is an iNaturalist observation from Robert Wernerehl (MA State Botanist) from 2022, which he is planning to submit.**

(3) **Native species status.** Is the species indigenous to Massachusetts?

YES. This species is considered indigenous to Massachusetts. It is listed as Native in Cullina et. al. 2011.

(4) **Habitat in Massachusetts.** Is a population of the species supported by habitat within the state of Massachusetts?

YES. In Massachusetts the species occurs in fens, disturbed wetland areas, lake, pond and river shores, in wet meadows and fields.

(5) **Federal Endangered Species Act status.** Is the species listed under the federal Endangered Species Act? If so, what is its federal status (Endangered or Threatened)

NO.

(6) Rarity and geographic distribution.

(a) Does the species have a small number of occurrences (populations) and/or small size of populations in the state? Are there potentially undocumented occurrences in the state, and if so, is it possible to estimate the potential number of undocumented occurrences?

YES. There are only seven known populations observed in the state in the past twenty-five years. It has been collected occasionally over the past 2 centuries, the Consortium of Northeastern Herbaria has 85 collections in Massachusetts from the Islands and Essex County to Berkshire County.

There could be additional populations which are not known. This is a diminutive species, growing only a few inches tall, and can be easily overlooked, even when in bloom or seed. It is unlikely that there are more than ten or twelve additional populations.

(b) What is the extent of the species' entire geographic range, and where within this range are Massachusetts populations (center or edge of range, or peripherally isolated)? Is the species a state or regional endemic?

Massachusetts is on the eastern edge of the species range. The species is known from Nova Scotia south to Alabama, to the Midwest (NatureServe 2023). It is also known across Canada and into Washington state where it is rare. It is not a state or regional endemic.

In New England, the species is assessed as S1 in Rhode Island, S2 in New Hampshire and as S3 in Vermont. Connecticut and Maine have not completed a Species Rank. NHESP recently completed a rank assessment of the species in Massachusetts, which assessed it as S2.

(7) Trends.

€ Is the species decreasing (or increasing) in state distribution, number of occurrences, and/or population size? What is the reproductive status of populations? Is reproductive capacity naturally low? Has any long-term trend in these factors been documented?

NHESP does not have long-term data for this species. Two recent floras completed by Bertin and Rawinski 2012 and Bertin et al., 2020 found a substantial decrease in towns where the species was observed compared to prior observations.

(8) Threats and vulnerability.

(d) What factors are driving a decreasing trend, or threatening reproductive status in the state? Please identify and describe any of the following threats, if present: habitat loss or degradation; predators, parasites, or competitors; species-targeted taking of individual organisms or disruption of breeding activity.

UNKNOWN. The species will survive in some disturbed areas, such as an emergency spillway of a dam (with some seepage), revegetating gravel pits, or natural locations on hummocks of sphagnum or bog mats. The loss may be due to loss of habitat, or part of the overall decrease in orchids, increase in browse from deer or other browsing mammals, loss of appropriate mycorrhizae fungi, or other causes not known.

€ Does the species have highly specialized habitat, resource needs, or other ecological requirements? Is dispersal ability poor?

It appears to prefer open seepage wetlands of fens, bogs, and moist meadows. As an orchid, albeit a short one, it is not expected to have poor dispersal ability with dust-sized, wind dispersed seeds.

Conservation goals.

What specific conservation goals should be met in order to change the conservation status or to remove the species from the state list? Please address goals for any or all of the following:

(a) State distribution, number of occurrences (populations), population levels, and/or reproductive rates

To change the conservation status to Special Concern, the species should have at least 25 known populations, including some in eastern Massachusetts. Of these, at least 10 should have population numbers over 50 plants. To remove the species from the MESA list, there should be at least 60 populations with at least one third with excellent or good viability.

To remove from the MESA list, at least 20 populations with excellent to good viability should be located on protected lands.

(b) Amount of protected habitat and/or number of protected occurrences

Two-thirds or at least 10 of the populations should be on permanently protected lands which will allow management as needed/recommended by NHESP. If any new large populations are found, ways to permanently protect the property should be researched.

(c) Management of protected habitat and/or occurrences

The management needs of this species are not known, although it is likely that fire or other methods to maintain open habitat will be needed.

Literature cited, additional documentation, and comments.

Bertin, Robert I. and Thomas Rawinski. 2012. Vascular Flora of Worcester County, Massachusetts. Special Publication of the New England Botanical Club.

Bertin, Robert I., Matthew G. Hickler, Karen B. Searcy, Glenn Motzkin, and Peter P. Grima. 2020. Vascular Flora of Franklin County, Massachusetts. Special Publication of the New England Botanical Club.

Bertin, Robert I. 2023. Personal communication.

Consortium of Northeastern Herbaria web site, www.neherbaria.org/ . 2023-02-16.

Cullina, Melissa Dow, Bryan Connolly, Bruce Sorrie, and Paul Somers. 2011. The Vascular Plants of Massachusetts, First Edition. MassWildlife publication.

NatureServe. 2023. NatureServe Network Biodiversity Location Data accessed through NatureServe Explorer [web application]. NatureServe, Arlington, Virginia. Available <https://explorer.natureserve.org/>. (Accessed February 16, 2023).

POWO (2023). "Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; <http://www.plantsoftheworldonline.org/> Retrieved 14 February 2023." <https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:20008072-1#publications>